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09/772,231	01/29/2001	Narayanan Ganapathy	MS155741.1	9670

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EXAMINER
HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
2136	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/772,231	GANAPATHY, NARAYANAN
	Examiner	Art Unit
	Brandon S. Hoffman	2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 December 2005</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-4 and 6-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4 and 6-35</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-4 and 6-35 are pending in this office action, claim 5 is canceled.

2.   Applicant's arguments, filed December 22, 2005, have been fully considered but they are not persuasive.

Rejections

3.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4.   Claims 1-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Tucker et al. (U.S. Patent No. 5,808,911).

Regarding claim 1, Tucker et al. teaches a system to facilitate secure communication of data from a user-level process, comprising:

- At least a first queue associated with **a first** process, such that the process is operative to directly communicate a message relative to the first queue (fig. 1, ref. num 120 and 122 within domain 106); and

- A first communication context operative to communicate the message between the first queue and a second communication context (fig. 3A, ref. num 174 to fig. 3B. ref. num 174 and col. 8, lines 22-47);

- Wherein communication between the first queue and the first communications context is controlled based on whether an appropriate association exists between the first queue and the first communications context, the association between the first queue and the first communications context being provided through a privileged operation not adjustable by the **first** process, **the association between the first queue and the first communication context requires membership to a common domain** (col. 3, line 54 through col. 4, line 9 and fig. 1, ref. num 128 of user domain 1 and col. 3, lines 5-9).

Regarding <u>claim 2</u>, <u>Tucker et al.</u> teaches wherein the first queue and the first communication context reside at a first node that is different from that of the second communication context (fig. 1, ref. num 102A and 102B).

Regarding <u>claim 3</u>, <u>Tucker et al.</u> teaches further comprising an interface at the first node operative to validate messages communicated from the first queue to the first communication context (fig. 1, ref. num 126 and col. 3, lines 54-65).

Regarding <u>claim 4</u>, <u>Tucker et al.</u> teaches wherein the interface is operative to prevent messages from being communicated from the first queue to the first

communication context if an association mismatch exists between the first queue and

the first communication context (col. 3, lines 54-65).

Regarding claim 6, Tucker et al. teaches further comprising a second queue

associated with a second process at the first node, such that the second process is

operative to directly communicate a message to the second queue (fig. 1, ref. num 120

and 122 within domain 108).

Regarding claim 7, Tucker et al. teaches wherein the second queue is associated

with the common domain through a privileged operation, such that the first and second

queues can share the first communication context to communicate messages through a

channel defined by the first communication context and the second communication

context, each of the first and second queues being operative to communicate messages

with at least one process at a node where the second communication context resides

(col. 3, line 54 through col. 4, line 9).

Regarding claim 8, Tucker et al. teaches wherein the first process further

comprises a process operating in a user mode and the second process comprises a

process operating in a user mode (fig. 1, ref. num 120, both processes are un user

domains).

Regarding claim 9, Tucker et al. teaches further including a third communication

context associated with the second queue through a privileged operation at the first

node, the third communication context enabling communication between the third

communication context and a fourth communication context that resides a node

different from the first node (fig. 1, ref. num 128 of user domain 2).

Regarding claim 10, Tucker et al. teaches wherein the common domain is a first

domain, the association between the second queue and the third communication

context corresponding to a second domain that is different from the first domain,

wherein each communication channel established in the second domain is isolated from

each channel established in the first domain (fig. 1, domain 1 is different from domain 2,

each having their own Xdoor 128).

Regarding claim 11, Tucker et al. teaches wherein the first queue and the first

communication context reside at a first node that is different from a second node at

which the second communication context resides, the system further comprising a third

communication context at the first node to enable communication of messages between

the third communication context and a fourth communication context that resides at a

third node that is different from the first node (fig. 1, 102A is node 1, 102B is node N,

meaning any number of different nodes can be connected).

Regarding claim 12, Tucker et al. teaches wherein the first queue is associated with the third communication context through a privileged operation, such that the first process is operative to communicate the message over a communication channel established between the third communication context and a fourth communication context that resides at the third node, which is different from the second node (col. 2, lines 30-47).

Regarding claim 13, Tucker et al. teaches wherein the first queue and the first communication context are associated so as to be part of a first domain, the system further comprising a second queue is associated with a second process, the second queue being associated with a third communication context so as to be part of second domain that is isolated relative to the first domain (col. 2, lines 30-47).

Regarding claim 14, Tucker et al. teaches a system to facilitate communication of data, comprising:

- A virtual hardware component at a first node operable to communicate a message received directly from an associated process (fig. 1, ref. num 120 and 122 within domain 106 or 108); and

- A first channel endpoint established at the first node, the first channel endpoint being operative to communicate messages to a second channel endpoint residing at a second node (fig. 3A, ref. num 174 to fig. 3B. ref. num 174 and col. 8, lines 22-47);

- Wherein each of the virtual **hardware** component and the first channel endpoint

  is associated with a respective domain through a privileged operation at the first

  node, communication of messages between the virtual **hardware** component

  and the first channel endpoint being controlled based on validation of the

  respective domains for the virtual **hardware** component and the first channel

  endpoint **being a common domain** (col. 3, line 54 through col. 4, line 9 and col.

  3, lines 5-9).

Regarding <u>claim 15</u>, <u>Tucker et al.</u> teaches wherein hardware at the first node is

operative to prevent messages from being sent between the virtual **hardware**

component and the first channel endpoint in response to detecting an invalid

association between the virtual **hardware** component and the first channel endpoint

(col. 3, lines 54-65).

Regarding <u>claim 16</u>, <u>Tucker et al.</u> teaches wherein the virtual **hardware**

component is a first virtual component, the system further comprising a second virtual

hardware component operative to communicate a message directly with an associated

process at the first node (fig. 1, ref. num 120 and 122 within domain 108).

Regarding <u>claim 17</u>, <u>Tucker et al.</u> teaches wherein the second virtual hardware

component and the first virtual hardware component are members of a common

domain, domain membership being assigned through a privileged operation not

adjustable by the first or second process, wherein the first and second virtual **hardware**

components are operative to share the first channel endpoint of the first node, such that

each of the first and second processes can communicate messages with at least one

process at the second node (col. 3, line 54 through col. 4, line 9).

Regarding claim 18, Tucker et al. teaches further including a third channel

endpoint at the first node, the third channel endpoint being operative to communicate

messages with a fourth channel endpoint that resides at a node different from the first

node (fig. 1, ref. num 128 of user domain 2).

Regarding claim 19, Tucker et al. teaches wherein the virtual **hardware**

component is a first virtual hardware component, the system further comprising a

second virtual hardware component at the first node that is associated with the third

channel endpoint through a privileged operation at the first node (fig. 1, ref. num 120

and 122 within domain 108).

Regarding claim 20, Tucker et al. teaches wherein each of the first and third

channel endpoints belongs to different domains, such that each communication channel

established between associated channel endpoints in one of the domains is isolated

from each communication channel established between associated channel endpoints

in each other of the domains (col. 2, lines 30-47).

Regarding claim 21, Tucker et al. teaches wherein each of the first and third

channel endpoints belongs to a common domain, such that each of the first and second

processes at the first node is operative to share first and third channel endpoints to

respectively communicate a message with at least one process at the second and third

nodes based on data in the respective message (fig. 1, ref. num 126 of domain 108,

more than one FD belongs in the domain, and col. 2, lines 30-47).

Regarding claim 22, Tucker et al. teaches a system to facilitate communication of

data, comprising:

- Storage means for receiving a message provided directly from a user-level

  process (fig. 1, ref. num 120 and 122 within domain 106 or 108);

- Communication means associated with the storage means for, upon validation of

  a **common** domain association between the storage means and the

  communication means, sending the stored request to a corresponding

  communication means at another node in the system (fig. 3A, ref. num 174 to fig.

  3B. ref. num 174 and col. 8, lines 22-47 and col. 3, lines 5-9); and

- Validation means for validating the association between the storage means and

  the communication means, the storage means and the communication means

  being associated in a privileged operation not adjustable by user-level processes

  (col. 3, line 54 through col. 4, line 9).

Regarding <u>claim 23</u>, <u>Tucker et al.</u> teaches a system to facilitate communication of data, comprising:

- Virtual storage means at a first node for storing a message for direct communication relative to a user-level process (fig. 1, ref. num 120 and 122 within domain 106 or 108);

- Endpoint communication means at the first node for means for, upon determining a common domain membership for the storage means and the endpoint communication means, enabling communication between the virtual storage means and the endpoint communication means (fig. 3A, ref. num 174 to fig. 3B. ref. num 174 and col. 8, lines 22-47 and col. 3, lines 5-9); and

- Control means for independently controlling domain membership for each of the virtual storage means and the endpoint communication means (col. 3, line 54 through col. 4, line 9).

Regarding <u>claim 24</u>, <u>Tucker et al.</u> teaches wherein the endpoint communication means further includes means for preventing communication of messages between the virtual storage means and the endpoint communication means in the absence of a common domain membership among virtual storage means and the endpoint communication means (fig. 1, domain 1 is different from domain 2, each having their own Xdoor 128).

Regarding claim 25, Tucker et al. teaches wherein the endpoint communication

means further includes means for permitting communication of messages between the

virtual storage means and the endpoint communication means when common domain

membership exists among virtual storage means and the endpoint communication

means (fig. 1, ref. num 126 of domain 108, more than one FD belongs in the domain,

and col. 2, lines 30-47).

Regarding claim 26, Tucker et al. teaches a computer-readable medium having

computer-executable instructions for:

- In a privileged mode, setting domain membership for a queue of a first node and

  setting domain membership for a communication component of the first node, the

  communication component of the first node being operable to communicate

  messages with a corresponding communication component at a second node,

  the domain membership being inaccessible by user-level processes, the queue

  being mapped into memory of an associated user-level process at the first node,

  such that the user-level process can communicate directly with the queue (fig. 1,

  ref. num 120 and 122 within domain 106 or 108 and col. 3, line 54 through col. 4,

  line 9); and

- Controlling communication of message between the queue and the

  communication component based on the domain membership set for each of the

  queue and the communication component **being the same** (fig. 3A, ref. num 174

  to fig. 3B. ref. num 174 and col. 8, lines 22-47 and col. 3, lines 5-9).

Regarding claim 27, Tucker et al. teaches having further computer-executable

instructions for providing an error message to the associated user-level process if the

domain membership between the queue and the communication component is invalid (it

is inherent that an error message will be created if an association between components

is invalid).

Regarding claim 28, Tucker et al. teaches having further computer-executable

instructions for analyzing the message to identify which of a plurality of communication

contexts is designated and validating domain membership between the queue and the

designated communication context to control communication of the message between

the queue and the designated communication context (fig. 1, ref. num 126 and col. 3,

lines 54-65).

Regarding claim 29, Tucker et al. teaches a method to facilitate communication

in a system architecture in which a process is operative to communicate a message

directly with a storage component coupled to at least one local communications

component in a node for communicating the message for receipt by a second

communications component, the method comprising:

- Associating the storage component with a domain for temporarily storing the

  message (fig. 1, ref. num 120 and 122 within domain 106 or 108);

- Associating the local communications component with a domain (fig. 3, ref. num

  174); and

- Controlling communication of a message between the storage component and
  the local communications component based on the domain of the storage
  component and the domain of the local communications component **being
  identical** (fig. 3A, ref. num 174 to fig. 3B. ref. num 174, col. 3, line 54 through
  col. 4, line 9, and col. 8, lines 22-47 and col. 3, lines 5-9).

Regarding claim 30, Tucker et al. teaches wherein the domain for the storage
component and the domain for the association of the local communications component
are implemented independently in privileged operation not adjustable by the user-level
process (col. 3, line 54 through col. 4, line 9).

Regarding claim 31, Tucker et al. teaches wherein the controlling further
comprises validating the domain of the storage component relative the domain of the
local communication component (fig. 1, ref. num 126 and col. 3, lines 54-65).

Regarding claim 32, Tucker et al. teaches further comprising preventing
communication of the message from the storage component to the communication
component in the absence of a match between the domain of the storage component
and the domain of the communication component (fig. 1, domain 1 is different from
domain 2, each having their own Xdoor 128).

Regarding claim 33, Tucker et al. teaches further comprising generating an error

message in the absence of a match between the domain of the at least part of the

storage component and the domain of the communication component (it is inherent that

an error message will be created if an association between components is invalid).

Regarding claim 34, Tucker et al. teaches further comprising sending the

message from the storage component to the communication component in response to

a valid association existing between the domain of the storage component and the

domain of the communication component (fig. 1, ref. num 126 and col. 3, lines 54-65).

Regarding claim 35, Tucker et al. teaches further comprising discerning from the

message which of at least one of a plurality of communication components is

designated and validating association between the storage component and each

designated communication component to control communication of the message

between the storage component and each designated communication component (col.

6, lines 59-67).

Response to Arguments

5.   Applicant amends claims 1, 14, 22, 26, and 29.

6.   Applicant argues that Tucker et al. fails to teach the association between the first

queue and the first communication context requires membership to a common domain

(page 13).

Regarding applicant's argument, examiner disagrees with applicant. Tucker et al. teaches three different locations of the object. One is within the same common domain, as required by applicant's invention. The other two are within a different domain of the same node and within a remote node. Examiner agrees that the second and third locations (different domain of the same node and a remote node) are outside of the claims of the instant application. However, Tucker et al. teaches that the object resides in the same (common) domain as the requesting thread, which is what is called for by claim 1. MPEP § 2123 states that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including non-preferred embodiments.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Hoffman whose telephone number is 571-272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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